

WHAT IS CLAIMED IS:

1. A threaded insert for insertion in a hole in a workpiece, the workpiece having a first side and a second side, the hole having a polygonal cross-section, said threaded insert comprising:

a first flange for being retained on the first side of the workpiece;

5 a hollow body, comprising a first section and an axially adjacent second section, the first section comprising a proximal end attached to the first flange and a distal end wherein the first section integrally transitions into the second section, said first section comprising a plurality of sides, the sides extending axially from the proximal end to the distal end, the sides, in cross-section, defining a polygon having the same cross-sectional shape as the hole, said first section adapted to be inserted through and restrained from rotation by said hole, at least one side having a split
10 extending axially along the side, said first section plastically deformable to form an enlarged portion on the second side; and

the second section having internal threads adapted to receive a threaded fastener.

2. The insert of claim 1 wherein the second side is blind.

15 3. The insert of claim 1 wherein the split is located along a vertex of the polygon.

4. The insert of claim 1 wherein a split is located along each vertex of the polygon.

5. The insert of claim 1 wherein the second section is round.

6. The insert of claim 1 wherein the second section has a closed end.

7. The insert of claim 1 wherein a sealing material is affixed to the underside of the first flange
20 adjacent to the first side of the workpiece.

8. The insert of claim 7 wherein the sealing material comprises polyvinyl chloride foam.

9. A threaded insert for insertion in a hole in a workpiece, the workpiece having a first side and a second side, the hole having a hexagonal cross-section, said threaded insert comprising:

a first flange for being retained on the first side of the workpiece;

25 a hollow body, comprising a first section and an axially adjacent second section, the first section having a proximal end attached to the first flange and a distal end wherein the first section integrally transitions into the second section, said first section having six sides, the sides extending axially from the proximal end to the distal end, the sides, in cross-section, defining a

hexagon, said first section adapted to be inserted through and restrained from rotation by said hole, at least one of the sides having a split extending axially along the side, said first section plastically deformable to form an enlarged portion on the second side; and the second section having internal threads adapted to receive a threaded fastener.

- 5 10. The insert of claim 9 wherein the second side is blind.
11. The insert of claim 9 wherein the second section is round.
12. The insert of claim 9 wherein the second section has a closed end.
13. The insert of claim 9 wherein a sealing material is affixed to the underside of the first flange adjacent to the first side of the workpiece.
- 10 14. The insert of claim 13 wherein the sealing material comprises polyvinyl chloride foam.
15. The insert of claim 9 wherein the split is located along a vertex of the hexagon.
16. The insert of claim 9 wherein a split is located along each vertex of the hexagon.
17. The insert of claim 9 wherein the first section has three splits.
18. The insert of claim 17 wherein the splits are phased 120 degrees apart.
- 15 19. The insert of claim 18 wherein each split is located along a vertex of the hexagon.
20. A threaded insert for insertion in a hole in a workpiece, the workpiece having a first side and a second side, the hole having a hexagonal cross-section, said threaded insert comprising:
a first flange for being retained on the first side of the workpiece;
a hollow body, comprising a first section and an axially adjacent round second section, the first
20 section having a proximal end attached to the first flange and a distal end wherein the first section integrally transitions into the second section, said first section having six sides, the sides extending axially from the proximal end to the distal end, the sides, in cross-section, defining a hexagon, said first section adapted to be inserted through and restrained from rotation by said hole, a split extending axially along each of three vertices of the hexagon, wherein the splits are
25 120 degrees apart, said first section plastically deformable to form an enlarged portion on the second side; and
the second section having internal threads adapted to receive a threaded fastener.
21. The insert of claim 20 wherein the second side is blind.

22. The insert of claim 20 wherein the second section has a closed end.

23. The insert of claim 20 wherein a sealing material is affixed to the underside of the first flange adjacent to the first side of the workpiece.

24. The insert of claim 23 wherein the sealing material comprises polyvinyl chloride foam.

5 25. A method of attaching fasteners to a workpiece, the workpiece having a first side and a second side, the method comprising the steps of:

punching a hole through the workpiece, the hole having a polygonal cross-section;

attaching a threaded insert to an installation tool, the threaded insert comprising:

(a) a first flange for being retained on the first side of the workpiece;

10 (b) a hollow body, comprising a first section and an axially adjacent second section, the first section comprising a proximal end attached to the first flange and a distal end wherein the first section integrally transitions into the second section, said first section comprising a plurality of sides, the sides extending axially from the proximal end to the distal end, the sides, in cross-section, defining a polygon having the same cross-sectional shape as the hole, said first section adapted to be inserted through and restrained from rotation by said hole, at least one of the sides having a split extending axially along the side, said first section plastically deformable to form an enlarged portion on the second side; and

20 (c) the second section having internal threads adapted to receive a threaded fastener;

inserting the hollow body of the threaded insert into the hole;

activating the installation tool to create an enlarged portion of the first section of the threaded insert on the second side;

25 removing the installation tool; and

inserting a threaded fastener into the threads of the threaded insert.

26. The method of claim 25 wherein the second side is blind.

27. A method of attaching fasteners to a workpiece, the workpiece having a first side and a second

side, the method comprising the steps of:

punching a hole through the workpiece, the hole having a polygonal cross-section;

attaching a threaded insert to an installation tool, the threaded insert comprising:

(a) a first flange for being retained on the first side of the workpiece;

(b) a hollow body, comprising a first section and an axially adjacent second section, the first section having a proximal end attached to the first flange and a distal end wherein the first section integrally transitions into the second section, said first section having six sides, the sides extending axially from the proximal end to the distal end, the sides, in cross-section, defining a hexagon, said first section adapted to be inserted through and restrained from rotation by said hole, at least one of the sides having a split extending axially along the side, said first section plastically deformable to form an enlarged portion on the second side; and

(c) the second section having internal threads adapted to receive a threaded fastener;

inserting the hollow body of the threaded insert into the hole;

activating the installation tool to create an enlarged portion of the first section of the threaded insert on the second side;

removing the installation tool; and

inserting a threaded fastener into the threads of the threaded insert.

28. The method of claim 27 wherein the second side is blind.